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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,640	06/25/2003	Marcus W. May	SIG000085	3147

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EXAMINER	
GUTIERREZ, ANTHONY	
ART UNIT	**PAPER NUMBER**
2857	

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/603,640	MAY ET AL.	
	Examiner	Art Unit	
	Anthony Gutierrez	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 5-7, 8, 11, 12, 14-16, 20-23, 26, 27, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Urbano et al. (United States Patent: US 6,592,521 B1) in view of Choudhury (United States Patent: US 6,169,669 B1).

As to claims 1, 5, 8, 11, 12, 16, 20, 23, 26, and 27, Urbano et al. discloses efficient battery use in a handheld multiple function device that includes using an uninterruptible power supply in a device that can employ either analog or digital control of the power supply (col. 4, line 59-col. 5, line 25, and col. 8, line 66-col. 9, line 11).

Urbano et al. does not disclose the specific steps of a method that employs a digital signal processor for controlling the power supply.

Choudhury, however, discloses specific steps to enable digital control of an uninterruptible power supply including monitoring (col. 1, line 50 – col. 2, line 14 and Fig. 3) at least one output for an overload condition ("overcurrent fault detector" 351 and col. 4, lines 59-61); monitoring a system voltage produced by a DC-to-DC converter for a system low voltage condition (V+ and V-, col. 4, lines 13-15, and 35-39); monitoring voltage of the battery for a battery low voltage condition (V_B and col. 4, lines 30-34);

and enabling one of a plurality of fail safe algorithms based on when one or more of the overload condition, the system low voltage; condition, and the battery low voltage condition are detected (col. 4, line 64-col. 5, line 19 and col. 8, line 58- col. 9, line 25).

Choudhury further explains why digital control is considered to be advantageous (col. 1, lines 30-50).

It therefore would have been obvious to one of ordinary skill in the art at the time of invention to employ digital control methods, as taught by Choudhury, in the uninterruptible power supply system of Urbano et al., in order to avoid the problems that aging and temperature tend to have on analog controlled systems, as addressed in the cited passages of Choudhury.

As to claims 6, 14, 21, and 29, Choudhury further discloses (See Fig. 3) determining loading on an output of the DC-DC converter that is providing the system voltage [the DC Bus Caps (321) is equivalent to the DC-DC converter (see col. 4, lines 14-16), the loading is the battery charger (325)]; determining available power duration based on the load and the voltage of the battery (this is determined by sampling I_B and V_B and V+ and V- at 329); and when the available power duration is less than a power available threshold, indicating the system low voltage condition (col. 5, lines 20-39 involving an underflow condition).

As to claims 7, 15, 22, and 30, Urbano et al. further discloses disabling a portion of the handheld multiple function device (col. 5., lines 50-56); storing current settings corresponding to execution of at least one functional algorithm processed by the portion of the handheld multiple function device; and continuing operation of the

handheld multiple function device in a limited, low power consumption mode (col. 8, lines 3-20).

3. Claims 2, 9, 17, and 24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Urbano et al. (United States Patent: US 6,592,521 B1) in view of Choudhury (United States Patent: US 6,169,669 B1), further in view of Barker et al. (United States Patent: 3,609,504).

The combination of Urbano et al. and Choudhury, includes a system in which a battery is connected to a battery charger further including the detection of overcurrent (overload condition) as addressed above.

Neither reference specifically teaches during an overload condition disabling the output for a predetermined period of time and after expiration of the period of time, enabling the output.

Barker et al. however teaches these steps (Abstract, col. 1, lines 12-18 and col. 2, lines 27-33) in order to prevent burning of wiring and discharge of an auxiliary battery

It therefore would have been obvious to one of ordinary skill in the art at the time of invention to perform these steps as taught by Barker et al. In the combination system of Urbano et al. and Choudhury in order to prevent damage to the circuitry and to prevent discharge of the battery, thereby maintaining the charge and thus, the lifetime of the battery.

4. Claims 3, 4, 10, 13, 18, 19, 25, and 28, are rejected under 35 U.S.C. 103(a) as being unpatentable over Urbano et al. (United States Patent: US 6,592,521 B1) in view

of Choudhury (United States Patent: US 6,169,669 B1), further in view of Patel et al. (United States Patent: 5,018,148).

The combination of Urbano et al. and Choudhury, includes a device in which uninterruptible power supply is used as addressed above. Neither reference specifically discloses a method for storing current settings and shutting down the device.

Patel et al., however, discloses that even in uninterruptible systems, certain systems are susceptible to loss of data (Abstract, col. 1, lines 6-19) and therefore the invention is geared toward anticipation of a failure which is necessary for an orderly shut-down. This implies that current settings are stored (col. 4, line 51- col. 5, line 19).

It therefore would have been obvious to one of ordinary skill in the art at the time of invention to include additional these steps as taught by Patel et al., in order to ensure that the device containing an uninterruptible supply as taught by Urbano et al. and Choudhury, does not suffer from the loss of data in the event of a power failure.

Response to Arguments

5. Applicant's arguments filed 6/20/05 have been fully considered but they are not persuasive.

The Applicant has provided a detailed interpretation of the features taught in the references relied on by the Examiner in his previous rejection, namely the references to Urbano et al. (United States Patent: US 6,592,521 B1) and Choudhury (United States Patent: US 6,169,669 B1).

The Applicant's essential argument for traversal of the Examiner's rejection is that neither reference specifically teaches or suggests "sensing for one or more of low

battery, overload, or system low voltage and initiating a fail-safe algorithm in response thereto".

The Examiner previously cited sections of the reference to Choudhury to teach these features, namely (col. 4, lines 30-34, col. 4, line 64-col. 5, line 19 and col. 8, line 58-col. 9, line 25).

The Examiner continues to maintain that these limitations are present in the cited sections and finds nothing in the Applicant's arguments, other than an assertion that they are not, to the contrary.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

United States Patent, US 6,590,369 B2 , to Burstein et al., teaches a digital voltage regulator using current control that includes a controller that operates with a digital control algorithm that allows a quick response to changes in load.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension

fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Gutierrez whose telephone number is (571) 272-2215. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on (571) 272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AG
Anthony Gutierrez

9/27/05

MARC S. HOFF
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